# Multifunctional Nanocomposites for Energy and Environmental Applications [EPUB]

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### Synopsis:

Focusing on real applications of nanocomposites and nanotechnologies for sustainable development, this book shows how nanocomposites can help to solve energy and environmental problems, including a broad overview of energy-related applications and a unique selection of environmental topics.

Clearly structured, the first part covers such energy-related applications as lithium ion batteries, solar cells, catalysis, thermoelectric waste heat harvesting and water splitting, while the second part provides unique perspectives on environmental fields, including nuclear waste management and carbon dioxide capture and storage.

The result is a successful combination of fundamentals for newcomers to the field and the latest results for experienced scientists, engineers, and industry researchers.

## **Additional Information:**

# About Zhanhu Guo

ZhaZhanhu Guo is Associate Professor in the Department of Chemical and Biomolecular Engineering at The University of Tennessee, Knoxville, USA. He received his PhD in chemical engineering from Louisiana State University, USA, followed by postdoctoral studies in mechanical and aerospace engineering at the University of California, Los Angeles, USA. He was the Chair of the Composite Division of the American Institute of Chemical Engineers in 2010-2011. Dr. Guo's Integrated Composites Laboratory focuses on multifunctional nanocomposites for energy, environmental and electronic devices applications.

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Na (Luna) Lu is an associate professor of the Lyles School of Civil Engineering and School of Materials Engineering at Purdue University. She has research interests/expertise in using nanotechnology to tailor a material's (electrical, thermal, mechanical, and optical) properties for renewable energy applications, in particular, thermoelectric, piezoelectric and solar cells. Fundamentally, her group studies electron, phonon, and photon transport mechanisms for a given materials system, and designs the transport properties to meet the targeted performance. Her research work has been featured in national and regional media. She is the recipient of a 2014 National Science Foundation Yong Investigator CAREER Award.

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